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ABSTRACT

This study was designed to examine the extent to which Illinois Goal Assessment Program (IGAP) constructing meaning scores correlate with Iowa Tests of Basic Skills (ITBS) reading scores and with performance on ITBS items dealing with literal meaning, inferences, and generalizations. In addition, this study assessed the ability of the IGAP reading strategies scores to differentially predict performance on the IGAP and the ITBS. Data used in the study were obtained during the spring 1988 administrations of the IGAP and the ITBS Form 7 reading comprehension test in the Chicago (Illinois) Public Schools (elementary school level). Since IGAP data for individual students were not available, it was necessary to conduct analyses of school-level IGAP means, ITBS median grade equivalents, and mean number correct items for each of the three ITBS skill areas. Data were analyzed separately for grades 3, 6, and 8; and sample sizes ranged from 423 to 446. Correlations between ITBS and IGAP constructing mean scores were uniformly quite high. It appears that the tests seem to be measuring much the same thing, at least at the school level. Although the emphases of the IGAP were described as being somewhat different than those of more traditional tests, equally high correlations were observed between IGAP constructing meaning and the literal comprehension part of the ITBS and between the IGAP and inferential comprehension items. Four data tables are included. (Author/TJH)

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THE IGAP AND THE ITBS: A COMPARATIVE STUDY

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Abstract

The purposes of this study were (1) to examine the extent to which Illinois Goal Assessment Program (IGAP) constructing meaning scores correlate with Iowa Tests of Basic Skills (ITBS) reading scores and with performance on ITBS items dealing with literal meaning, inferences, and generalizations; and (2) to determine whether the IGAP reading strategies scores differentially predict performance on the IGAP and the ITBS.

The data used in this study were obtained during the spring 1988 administrations of the IGAP and the ITBS Form 7 reading comprehension test in the Chicago Public Schools. Since IGAP data for individual students were not available, it was necessary to conduct analyses of school-level IGAP means, ITBS median grade equivalents, and mean number correct items for each of the three ITBS skill areas. Data were analyzed separately for grades 3, 6, and 8.

Correlations between the ITBS and IGAP constructing meaning scores were uniformly quite high: .84 at grade 3, .87 at grade 6, and .85 at grade 8. Correlations between tha constructing meaning mean, and number of correct fact, inference and generalization items were also high (.73 to .85). Despite the stated emphasis of the IGAP on inferential comprehension, there were only small differences among the correlations between constructing meaning and each of the three item categories (fact, inference, and generalization). The IGAP reading strategies scores correlated about equally well with ITBS reading scores and IGAP scores.

It appears from the high correlations between ITBS and IGAP scores that the tests seem to be measuring much the same thing, at least at the school level. Although the emphases of the IGAP were described as being somewhat different than those of more traditional tests, equally high correlations were observed between IGAP constructing meaning and the literal comprehension part of the ITBS ("fact" items), and between the IGAP and inferential comprehension items "inference" and "generalization" items).

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The IGAP and the ITBS

A Comparative Study

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Paper presented at the annual meeting of the National Council on Measurement in Education, San Francisco, April 1989

Introduction

The Constructing Meaning section of the Illinois Goal Assessment Program (IGAP) Reading Assessment is the component of the assessment that is most closely analogous to a traditional reading test. Yet, there are differences: the IGAP has longer reading passages, multiple possible correct answers to each item, and a stronger emphasis on inferential comprehension than the Iowa Tests of Basic Skills (ITBS). Another unique feature of the IGAP is the Reading Strategies component, which is divided into two components, problem solving and centrality. Problem solving measures how aware students are of different reading strategies (e.g., rereading various parts of a story, looking up a word in the dictionary) and centrality, how able they are to identify and distinguish important ideas in the text and to evaluate the adequacy of several summaries of the text.

Purpose

The purposes of this study are (1) to examine the extent to which IGAP scores correlate with ITBS overall reading comprehension scores and with performance on ITBS items dealing with literal meaning, inferences, and generalizations; and (2) to determine whether the IGAP Reading Strategies scores differentially predict performance on the IGAP and the ITBS.

Data Sources

The data used in this study were obtained during the spring 1988 administrations of the IGAP and the ITBS Form 7 Reading Comprehension in Chicago public elementary schools. Since data for individual students was not available, the analysis had to be conducted on school averages, and the results must be interpreted with that constraint in mind. The IGAP was given to students at grades 3, 6, and 8 and average scale scores for each grade were available. IGAP reading strategies data for each school consist of reading strategies scaled score and raw scores for problem solving and centrality. Since reading strategies average scores vary from form to form, use of reading strategies raw scores is problematic, especially at the third grade, where students in a given school may have taken only one form. However, form assignment was randomized throughout the system and it was felt that it was important to look at problem solving and centrality separately. Hence, analyses included those two average raw scores.

The ITBS data include median grade equivalent score at grades 3, 6, and 8 and the average number of items correct at each grade on the ITBS reading subskills: fact, inference, and generalization (a description of these categories is given below). Since not all elementary schools have students at each of the three grades in question, and since some scores were not reported at schools with a very small N at the grades in question, the numbers of schools for which scores are available vary from grade to grade, but most results are based on approximately 400 schools.

The publisher of the ITBS divides the test's reading comprehension items into three categories: facts, inferences, and generalizations. The categories are described Table 1. Table 1 also gives the number of items on the Level 9, 12, and 14 tests (corresponding to grades 3, 6, and 8) that fall into each of the classifications.

IGAP Constructing Meaning items are divided into six categories:

- vocabulary (evaluates students' ability to understand the meanings of words and phrases from the passage, using textual context)
- characterization (evaluates students' ability to understand characters' key traits or motives using information from various points in the text)
- explicit (focuses on important information specifically stated in the text)
- implicit (requires students to make inferences within a sentence, between adjoining sentences, or within and across paragraphs)
- implicit (requires students to make inferences within a sentence, between adjoining sentences, or within and across paragraphs
- application (requires students to apply information from the text to new situations or contexts
- author's purpose/craft/bias (assesses students' ability to identify the author's reason(s) for using a particular writing convention, the message(s) the author intended to communicate or the point of view/bias of the author).

Results

Average constructing meaning scores were below the state average of 250 and ITBS scores were somewhat below the national average (based on 1978 norms). Correlations among IGAP mean constructing meaning scale score, ITBS reading comprehension median grade equivalent, mean number of ITBS fact, inference, and generalization items answered correctly, and reading strategies variables are given in Table 2. The reader is reminded that these are school level data, rather than individual students' scores. Also, correlations have not been corrected for test reliability, but the corrections would have resulted in very small changes since the data points were school means.

At the school level, the correlations between the ITBS and IGAP constructing meaning scores are uniformly quite high: .84 at grade 3, .87 at grade 6, and .85 at grade 8. This is despite the fact that the distribution on ITBS item types differs considerably from grade to grade. Correlations between constructing meaning and number of correct fact, inference and generalization items were also high, but there were only small differences among the correlations between constructing meaning and the three item categories. At third grade, the correlations between

constructing meaning and fact, inference and generalization were .77, .73, and .77, respectively. At grade six, the correlations were .85, .84, and .85, and the eighth grade correlations were .79, .80, and .78.

Given the high correlation between constructing meaning and ITBS grade-equivalents, it is not surprising that IGAP reading strategies scale scores correlated about equally well with constructing meaning and ITBS. At third grade, those correlations are .71 for ITBS with reading strategies and .70 for constructing meaning with reading strategies. At grade six, the correlations were .80 and .86, and the eighth grade correlations were .76 and .85. These are considerably higher than the constructing meaning/reading strategies correlations for individual students reported in the IGAP Technical Manual (.43, .46, and .47 at grades 3, 6, and 8, respectively). Centrality and problem solving raw scores both had about the same correlation with fact, inference, and generalization scores.

Discussion

It appears from the substantial correlations between ITBS and IGAP scores that the tests seem to be measuring much the same thing, at least at the school level. And there seems to be no difference in the degree of relationship between IGAP and the literal comprehension part of the ITBS ("fact") as compared with the relationship between the IGAP and the inferential comprehension items ("inference," "generalization"). One possible explanation is the way the IGAP items might be classified into the three ITBS categories. Two of the IGAP item types, explicit and vocabulary, seem to correspond to skills included under the fact grouping on the ITBS. Another two of the IGAP item types, implicit and characterization, fall under the ITBS heading of inference. And the last two types of items, application and author's purpose/craft/bias certainly appear to be what would be called generalization items on the ITBS.

Table 1

Distribution of ITBS Form 7 Reading Comprehension Items

		Number of Items Levels 9	12	14
Facts:	To Recognize and Understand State Factual Details and Relationships (Literal Meaning)	23 (52%)	17 (25%)	23 (40%)
F1	Description: To understand factual details relating to description of people, places, objects, and events	13	9	8
F2	Categorization: To understand factual details relating to classification	3	1	4
F3	Relationships: To understand functional relationships, time, and sequence	5	6	7
F4	Contextual Meaning: To deduce the meanings of words or phrases from context	2	1	4
Inferences:	To Infer Underlying Relationships (Interpretative Meaning)	11 (25%)	19 (34%)	13 (36%)
I1	Cause and Effect: To understand cause, effect, concomitance, and interaction	1	5	1
I2	Draw Conclusions: To draw conclusions from information and relationships	6	6	5
I3	Traits and Feelings: To infer traits, feelings, and emotions of characters	2	5	5
I4	Motives: Infer the motives and reasons for the actions of characters	2	3	2
Generalizations:	To Develop Generalizations from a Selection (Evaluative Meaning)	10 (40%)	20 (22%)	22 (38%)
G1	Main Idea: To recognize the main idea or topic of a paragraph or selection	5	5	5
G2	Organization: To understand the organization of a paragraph or selection	1	2	1
G3	Application: To apply information through generalization or prediction	2	1	2
G4	Purpose: To recognize the author's purpose, motive, or intention	2	4	3
G5	Viewpoint: To recognize the author's viewpoint, attitude, or bias	-	2	2
G5	Figurative Language: To interpret figurative language	-	4	4
G7	Mood: To recognize the mood or tone of a selection	-	-	2
G8	Style: To recognize qualities of style or structure	-	2	3
	Totals	44	56	58

Note: Levels 9, 12 and 14 correspond to grades 3, 6 and 8, respectively.

Source: Iowa Tests of Basic Skills Teacher's Guide

Table 2

Pearson Correlation Coefficients

Grade 3

	ITBS GE	ITBS FACT	ITBS INF	ITBS GEN	CONST MNG	STRAT PROB	STRAT CENT	STRAT SCALE
ITBS G.E.	1.00	.87	.83	.87	.84	.52	.57	.71
ITBS FACT		1.00	.91	.91	.77	.49	.49	.64
ITBS INF			1.00	.92	.73	.47	.47	.61
ITBS GEN				1.00	.77	.49	.51	.66
CONST MNG					1.00	.57	.60	.70
STRAT PROB						1.00	.28	.70
STRAT CENT							1.00	.75
STRAT SCALE								1.00

Note: Sample sizes range from 423 to 446.

ITBS GE = ITBS Form 7 school median grade equivalent.
ITBS FACT = means number of ITBS fact items correct.
ITBS INF = mean number of ITBS inference items correct.
ITBS GEN = mean number of ITBS generalization items correct.
CONST MNG = mean IGAP constructing meaning scale score.
STRAT PROB = mean IGAP reading strategies problem solving raw score.
STRAT CENT = mean IGAP reading strategies centrality raw score.
STRAT SCALE = mean IGAP reading strategies scale score.

Table 3

Pearson Correlation Coefficients

Grade 6

	ITBS GE	ITBS FACT	ITBS INF	ITBS GEN	CONST MNG	STRAT PROB	STRAT CENT	STRAT SCALE
ITBS G.E.	1.00	.93	.93	.93	.87	.76	.74	.80
ITBS FACT		1.00	.96	.97	.85	.74	.73	.79
ITBS INF	-	-	1.00	.96	.84	.72	.71	.77
ITBS GEN	-	-	-	1.00	.85	.74	.72	.78
CONST MNG	-	-	-	-	1.00	.80	.78	.86
STRAT PROB	-	-	-	-	-	1.00	.74	.93
STRAT CENT	-	-	-	-	-	-	1.00	.92
STRAT SCALE	-	-	-	-	-	-	-	1.00

Note: Sample sizes range from 414 to 431.

ITBS GE = ITBS Form 7 school median grade equivalent.
ITBS FACT = means number of ITBS fact items correct.
ITBS INF = mean number of ITBS inference items correct.
ITBS GEN = mean number of ITBS generalization items correct.
CONST MNG = mean IGAP constructing meaning scale score.
STRAT PROB = mean IGAP reading strategies problem solving raw score.
STRAT CENT = mean IGAP reading strategies centrality raw score.
STRAT SCALE = mean IGAP reading strategies scale score.

Table 4

Pearson Correlation Coefficients

Grade 8

	ITBS GE	ITBS FACT	ITBS INF	ITBS GEN	CONST MNG	STRAT PROB	STRAT CENT	STRAT SCALE
ITBS G.E.	1.00	.88	.88	.88	.85	.72	.68	.76
ITBS FACT	-	1.00	.94	.96	.79	.68	.62	.71
ITBS INF	-	-	1.00	.94	.80	.68	.63	.72
ITBS GEN	-	-	-	1.00	.78	.68	.62	.71
CONST MNG	-	-	-	-	1.00	.77	.79	.85
STRAT PROB	-	-	-	-	-	1.00	.70	.93
STRAT CENT	-	-	-	-	-	-	1.00	.90
STRAT SCALE	-	-	-	-	-	-	-	1.00

Note: Sample sizes range from 381 to 400.

ITBS GE = ITBS Form 7 school median grade equivalent.
ITBS FACT = means number of ITBS fact items correct.
ITBS INF = mean number of ITBS inference items correct.
ITBS GEN = mean number of ITBS generalization items correct.
CONST MNG = mean IGAP constructing meaning scale score.
STRAT PROB = mean IGAP reading strategies problem solving raw score.
STRAT CENT = mean IGAP reading strategies centrality raw score.
STRAT SCALE = mean IGAP reading strategies scale score.